2005

Boat Ramp Monitor

Report

Department of Conservation and Recreation ~ Lakes and Ponds Program

dcr
Massachusetts

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Massachusetts
Department of Conservation & Recreation
Lakes and Ponds Program

2005 Boat Ramp Monitoring Program

In response to the increasing spread of invasive non-native aquatic species throughout our water bodies, the Department of Conservation and Recreation (DCR) Lakes and Ponds Program has developed the Boat Ramp Monitor Program.

Non-native or exotic species are plants or animals that are indigenous to other parts of the country or world, and when they are introduced to a new area often disrupt the balance of the new ecosystem. Many non-native plants reproduce very rapidly, displacing native species and developing mats at the water's surface that render boating, fishing, swimming and other recreational activities impossible or dangerous.

Non-native plants are introduced to new areas in a variety of ways including accidental escape from the aqua-gardening/aquarium trade, intentional release or by hitching rides from foreign countries in ship ballast water. Once introduced to a new area, they are further spread around to additional water bodies on boat motors, trailers, fishing gear and in bait buckets. Many non-native plants reproduce vegetatively. This means, that when just one small plant fragment enters a new water body it is able to grow into a mature plant and potentially infest the entire lake or pond. When a non-native species is established it is very expensive to control and nearly impossible to eradicate. **Prevention is the key!**

The Boat Ramp Monitor Program is a three-pronged approach to this problem. Boat ramp monitors have been placed at both infested and un-infested lakes and ponds statewide. First, this project helps prevent pristine water bodies from becoming infested; it reduces further spread of the exotic plants from infested areas, and finally, educates boaters about non-native species and the steps they can take to protect our lakes and ponds.

For the summer of 2005, six ramp monitors hired and they were placed at 8 main ramps: Big Pond (Otis), Otis Reservoir (Tolland), Lake Cochituate (Wayland), Lake Quinsigamond (Shrewsbury), Wallum Lake (Douglas), Whitehall Reservoir (Hopkinton), Webster Lake (Webster), and Chebacco Lake (Essex). (Two of the five monitors rotated between two or three ramps.) Six of the ramps were repeats from 2004, and 3 were new ramps. One and tree day visits were also conducted at Pequot Pond and Quaboag Pond, respectively. Their goal was to inspect every boat entering or leaving to make sure that no plant fragments are attached the boat, trailer or gear. Boaters were given an informational brochure, asked to participate in a voluntary boat inspection and complete a brief survey.

2005 Boat Ramp Monitor Locations

Protection

Wallum Lake
Located in Douglas, MA in the heart of Douglas State Forest, this 322-acre waterbody has deep clarity and a maximum depth of 78 feet. A 2002 plant survey showed that there were no non-native aquatic species present, and plant growth in general was scarce. This boat ramp is highly used, and due to its proximity to Rhode Island and Connecticut, draws numerous out of state boaters. A second ramp is located in Burrowville, RI.

Big Pond
Big Pond in Otis MA is fortunate not to have any infestations of non-native aquatic species, despite it high boater use. There are two ramps that provide access to the waterbody, the Big Pond boat ramp and J & D Marina. The ramp monitor divided hours between both Otis Reservoir and Big Pond.

Otis Reservoir
This large 1200-acre waterbody located in Tolland State Forest, and since the waterbody is free of non-native aquatic species, it is considered a priority protection location for the Lakes and Ponds Program. Although the waterbody is relatively shallow, plant growth is somewhat scarce. The ramp monitor divided time between Otis Reservoir and Big Pond.

Preventing Further Spread

Chebacco Lake
Located in Essex and Hamilton this 22 foot deep, 209 acre lake is a popular location for recreational boaters in northeastern Massachusetts. The lake has dense aquatic vegetation, including an infestation of Fanwort (*Cabomba caroliniana*). Although the ramp is primarily used for car top access, there is space for approximately 15 trailers. The goal of the ramp monitor at this location was to prevent the spread of Fanwort from Chebacco Lake to other water bodies, and to prevent the introduction of a second non-native species.

Lake Cochituate
Sprawled across three towns (Natick, Wayland and Framingham), this 650-acre lake draws over 200,000 visitors annually to Cochituate State Park, many of which are boaters. Additionally, it is a favorite location for bass tournaments, water skiing competitions and other public events. As of 2002, this water body has had a large infestation of three non-native species; Eurasian Milfoil (*Myriophyllum spicatum*), Variable Milfoil (*Myriophyllum heterophyllum*), and Curly-leaved Pondweed (*Potamogeton crispus*). DCR's main concern is to prevent the spread of these species to other waterbodies in the area, and to educate the large number of boaters who frequent the lake.

Pequot Pond
This pond is located in the Hampton Ponds State Park in Westfield Massachusetts. A one-day visit was scheduled to inform boaters about the presence of Water Chestnut (*Trapa natans*) and Eurasian Milfoil (*Myriophyllum spicatum*).

Quaboag Pond
Quaboag Pond is a 541 acre water body located in both Brookfield and East Brookfield. There is public access provided at the boat ramp and room for 31 trailers. The ramp monitor primarily assigned to Webster Lake spent three days at this ramp in an effort to reach additional boaters in the area.

Lake Quinsigamond
Lake Quinsigamond is a large 772 acre urban waterbody nestled between Shrewsbury and Worcester. Due to is size, location, very developed shoreline, presence of two boat ramps and waterfront restaurants, Quinsigamond draws a very diverse crowd, including recreational motor boats, sail boats, crew teams, jet skis and kayakers. There are several non-native plants in the waterbody including Variable Milfoil *(Myriophyllum heterophyllum),* Eurasian Milfoil *(Myriophyllum spicatum*), and Curly-leaved Pondweed (*Potamogeton crispus*). There are three main basins, and the shallow southern basin (often referred to as Flint Pond) has the greatest concentration of aquatic vegetation. The ramp monitors worked mainly to prevent the invasive species in this pond spreading to other water bodies.

Webster Lake
Webster Lake is over 1270 acres and there is public access via two boat ramps. This water body receives very heavy use, especially on the weekends during the summer. Unfortunately, in addition to several species of non-native plants (Fanwort, Variable Milfoil and Eurasian Milfoil) Webster Lake is one of the few water bodies in the state with non-native clams. A thriving population of Asian Clams (*Corbicula*) was confirmed in 2003. In an effort to prevent he spread of these clams to additional water bodies, the Webster Lake ramp monitor informed boaters of the clams presence and emphasized the importance of disposing of bait bucket water, live well water and engine cooling water well away from shore.

Whitehall Reservoir
Located in Whitehall State Park in Hopkinton, MA, this vast 573-acre water body is a favorite for location for fishermen. It is relatively shallow (average depth is 6 feet) and the speed limit on the water body prevents waterskiing and other water sports. Unfortunately, a large infestation of Variable Milfoil (*M. heterophyllum*) threatens the health of the reservoir. The goal of the ramp monitor here was to stop these species from spreading to other water bodies in the area, and to prevent the introduction of any additional non-native species.

Department of Conservation and Recreation
Lakes and Ponds Program
Boat Ramp Monitoring Program 2005

Date _____
Location _____

Welcome to _____. My name is _____, and I work for the Department of Conservation and Recreation. We are working to protect our public lakes and ponds from infestations of invasive exotic plants. Do you mind if I take a couple of minutes to check your boat for the presence aquatic plants and to ask you a few brief questions about aquatic invasive species? By increasing public awareness we hope to slow the spread of these invasive species.

Boater Survey

1) What town and state do you currently live in? _____

2) What are the last two lakes or ponds that your boat has been in? _____

3) Prior to today, had you heard of invasive exotic species? YES NO

   If so, which species have you heard about? _____

4) Prior to today, were you aware that one of the main ways that invasive plants enter a lake or pond is by hitching rides on boat trailers, motors and other gear? YES NO

5) Are you willing to take the time to inspect and wash your boat after visiting a lake or pond? YES NO

   If not, why? _____

6) Has this conversation increased your awareness and concern of invasive species? YES NO

Thank you for taking the time to participate in our survey. Here are a few brochures containing additional information on aquatic invasive species and a complimentary boat key ring. Enjoy your visit!

- Did you obtain permission to inspect the boat and trailer? YES NO
- Were any plant fragments or aquatic animals present on the boat? YES NO
- If so, were they non-native? YES NO
- What species did you find? _____

Thank you for your time!

Results

Total Number of Surveys Collected

(*The total number of surveys collected at each ramp is listed in Table A*)
During the second season of the DCR Lakes and Ponds Boat Ramp Monitoring program, 1501 surveys were collected from boaters statewide at ten ramps.

(The responses for each individual ramp are listed in Table B)
Overall, the greatest number of surveys were collected at Otis Reservoir in Tolland State Park (442 surveys) followed by Webster Lake (279 surveys); Lake Cochituate (294); Wallum Lake (129 surveys); Chebacco Lake (120 surveys); Lake Quinsigamond (101 surveys), Quaboag Pond (48 surveys), Big Pond (42 surveys); Whitehall Reservoir (32 surveys), and Pequot Pond (14 surveys). It is important to note that these numbers are not a reflection of how busy the individual ramps are, since some of the boat ramp monitors divided their time between two or three ramps, while other monitors remained at only one ramp.

Overall

(*The tally of responses to each question is listed in Table A*)
The survey results show that of the 1501 surveys collected:

- 723.2% of boaters were aware of invasive species. (see Graph 1)
  (1094 were aware; 401 were not aware; 6 did not respond)
- The non-native species that people were most familiar with was Milfoil (268), followed by Zebra Mussels (69), Fanwort (19), Water Chestnut (16), Asian Clam (12), Purple Loosestrife (13), Hydrilla (9), Other (7), all/many (7), Snakehead Fish (3), and finally Phragmites (1). (see Graph 2)
- 68.1% of the boaters understood that plants are spread by boats. (see Graph 3)
  (1016 were aware; 477 were not aware; 8 did not respond)
- 97.5% of all boaters surveyed were willing to wash their boats. (see Graph 4)
  (1450 were willing; 37 were not willing; 14 did not respond or said maybe.)
- 93.1% of the boaters felt the conversation increased their awareness. (Graph 5)
  (1379 boaters felt that their AIS awareness was increased; 102 felt their AIS awareness was not increased; 20 boaters did not respond)
- 98.2% of the boaters were willing to participate in the inspection. (see Graph 6)
  (1440 inspected; 27 refused; the remaining 34 boats had already been launched, so an inspection was not possible).

- 14.4% (210) of the 1440 inspected boats had plant fragments. (see Graph 7)
- 53.1% of these fragments were non-native. (see Graph 8)
  (110 were exotic, 86 fragments were native; 14 were unidentifiable)

Table A Total results

Question	yes	no	blank	total
Prior to today, have you heard of AIS?	1094	401	6	1501
Are you aware boats spread AIS?	1016	477	8	1501
Are you willing to wash your boat?	1450	37	14	1501
Has this conversation increased awareness?	1379	102	20	1501
Permission given to inspect boat and trailer?	1440	27	34	1501
Were any plant fragments present?	210	1230	0	1440
Were the fragments found were non-native?	110	86	14	210

Table B Results by ramp

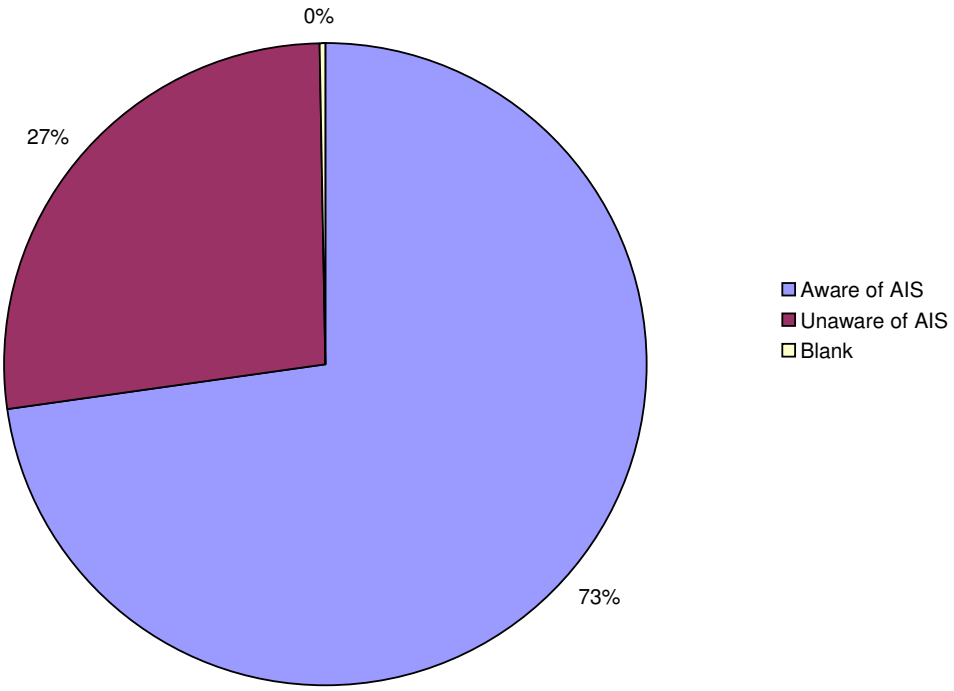
	Ramp Total	Aware of AIS of state	Not aware	Blank	Aware boats carry AIS	Not aware	Blank
Big Pond	42	27	15	0	24	18	0
Chebacco	120	78	42	0	70	50	0
Cochituate	294	238	56	0	230	64	0
Otis	442	338	102	2	297	141	4
Pequot	14	7	7	0	7	7	0
Quaboag	48	39	9	0	37	11	0
Quinsig.	101	71	30	0	69	32	0
Wallum	129	91	34	4	85	40	4
Webster	279	180	99	0	172	107	0
Whitehall	32	25	7	0	25	*7*	0
Total	1501	1094	401	6	1016	477	8

	Ramp Total	Willing to wash/inspect?	Not willing	Blank	Awareness increased?	Not increased	Blank
Big Pond	42	42	0	0	42	0	0
Chebacco	120	119	1	0	106	14	0
Cochituate	294	286	8	0	265	24	5
Otis	442	417	14	11	433	0	9
Pequot	14	14	0	0	13	1	0
Quaboag	48	46	2	0	44	4	0
Quinsig.	101	96	5	0	95	5	1
Wallum	129	126	1	2	112	15	2
Webster	279	272	6	1	239	37	3
Whitehall	32	32	0	0	30	*2*	0
	1501	1450	37	14	1379	102	20

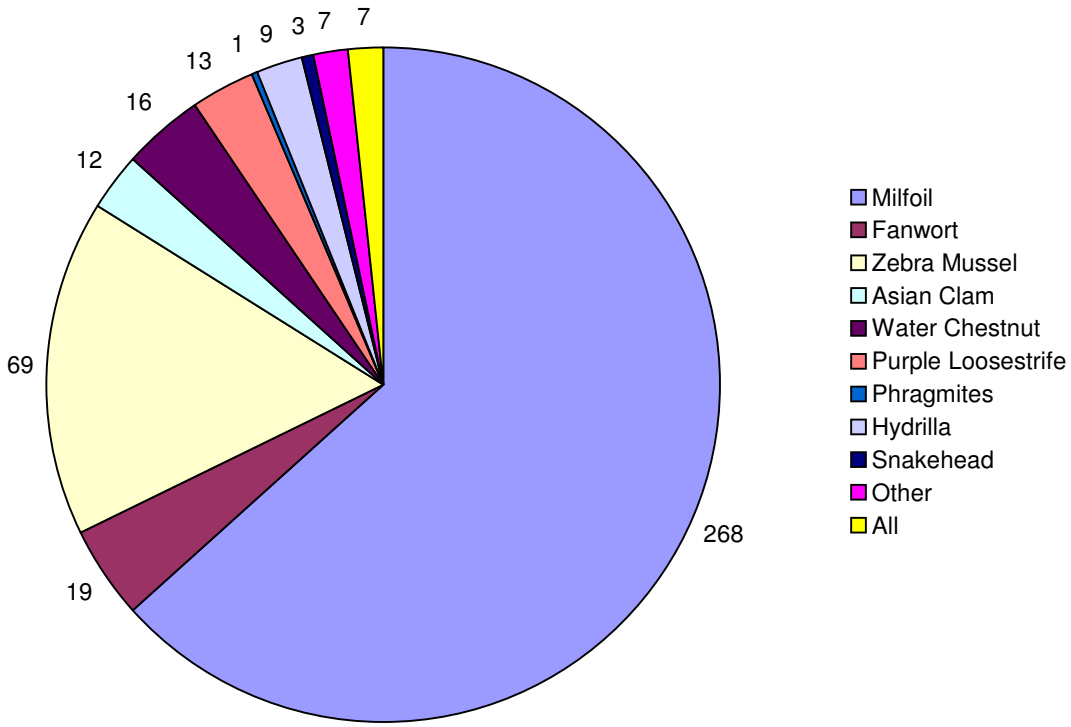
	Ramp Total	# Boats inspected	Declined	In water/ blank	# Boats w/ plants	With out plants	Plants exotic	Plants native	Plants unknown
Big Pond	42	42	0	0	2	40	0	2	0
Chebacco	120	116	2	2	3	113	1	2	0
Cochituate	294	272	19	*3*	39	233	38	0	1
Otis	442	436	3	3	63	373	11	52	0
Pequot	14	14	0	0	4	10	1	3	0
Quaboag	48	47	1	0	19	28	12	7	0
Quinsig.	101	86	1	14	11	75	8	2	1
Wallum	129	128	0	1	10	118	3	3	4
Webster	279	267	1	11	53	214	35	5	3
Whitehall	32	*32*	*0*	*0*	6	26	1	0	5
	1501	1440	27	34	210	1230	110	86	14

2005 Overall Boater Survey Results

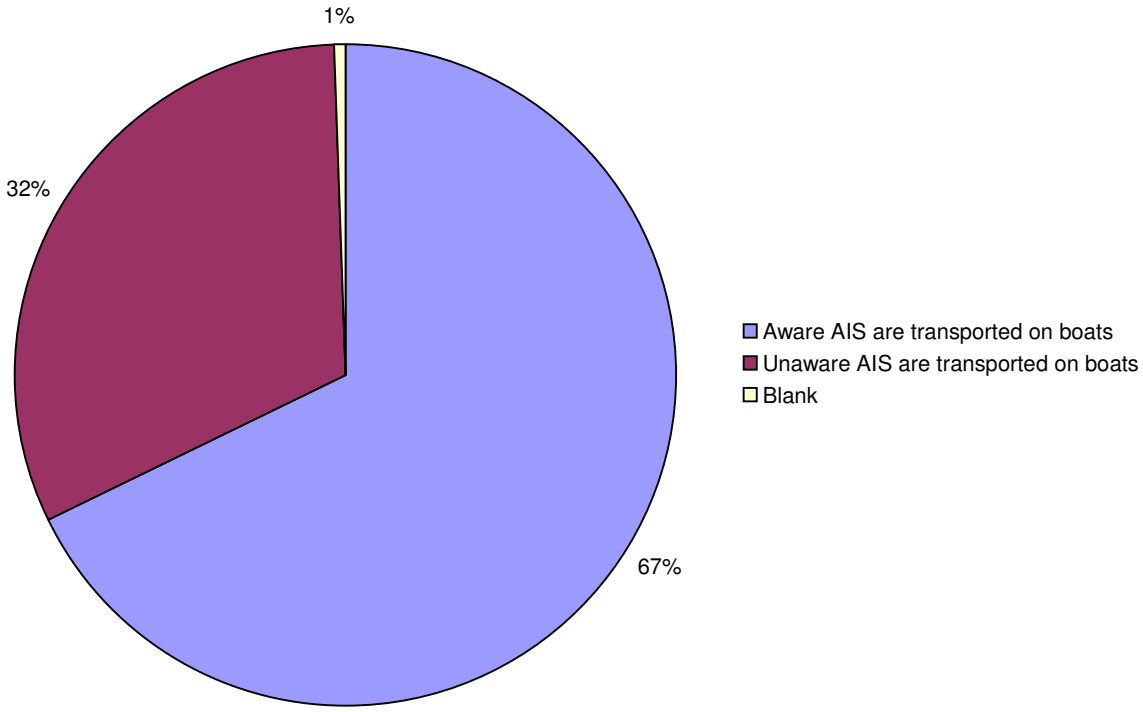
Graph 1 Prior to today, had you heard of invasive exotic species?



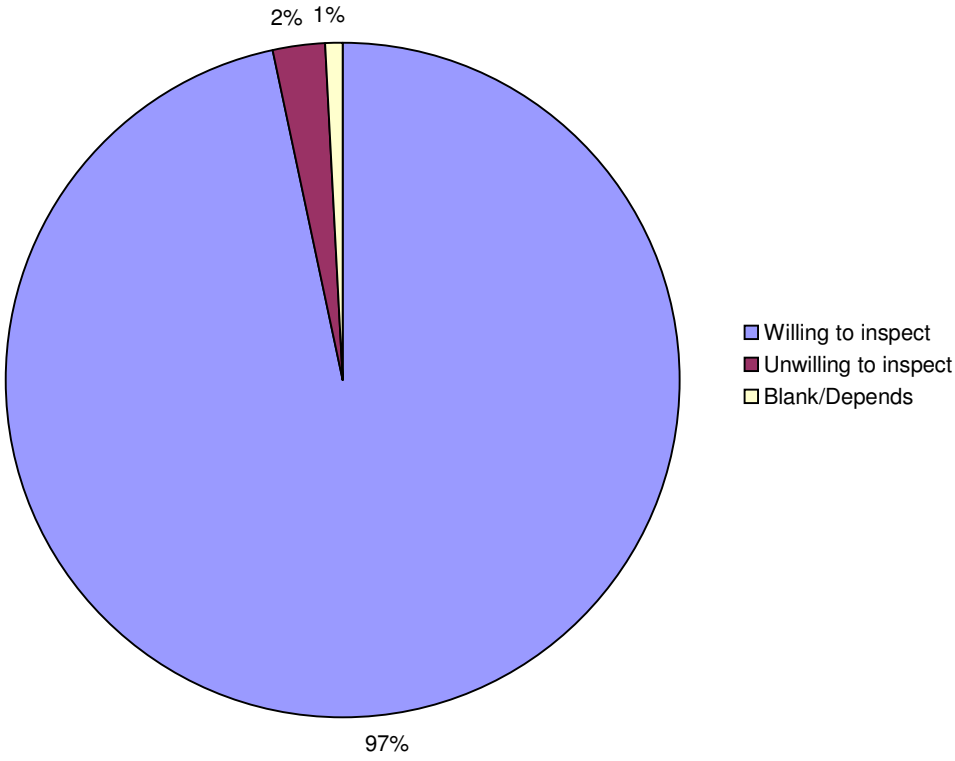
Graph 2 If so, which species?



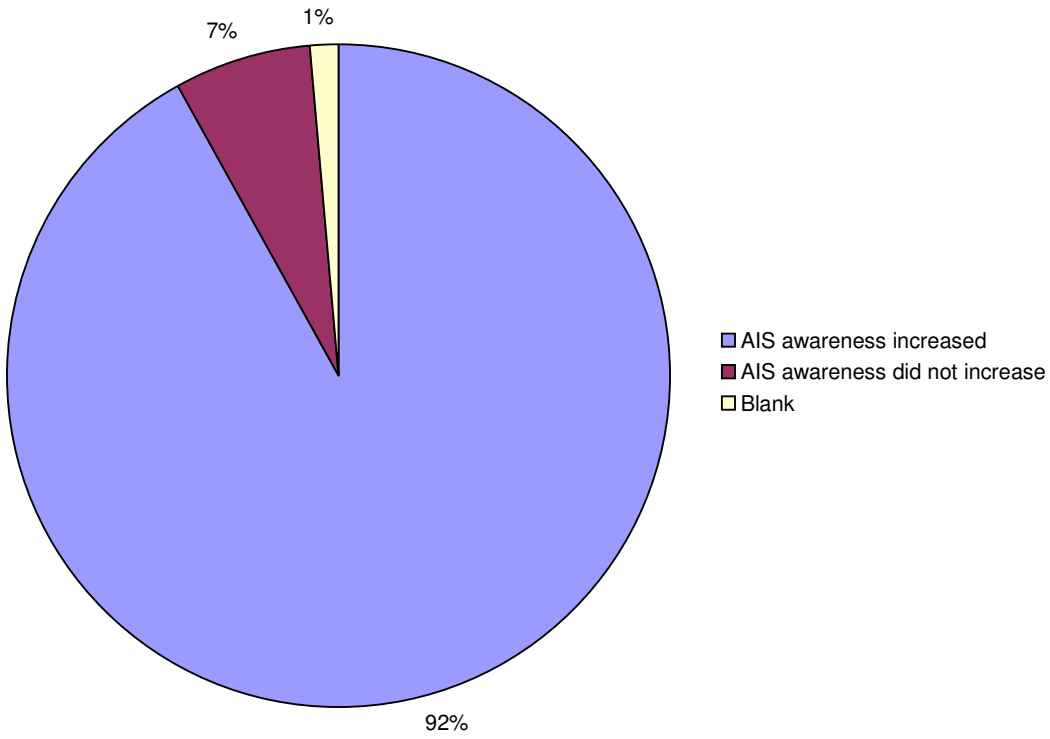
Graph 3 Prior to today, were you aware that one of the main ways that invasive plants enter a lake or pond is by hitching rides on boat motors, trailers and other gear?



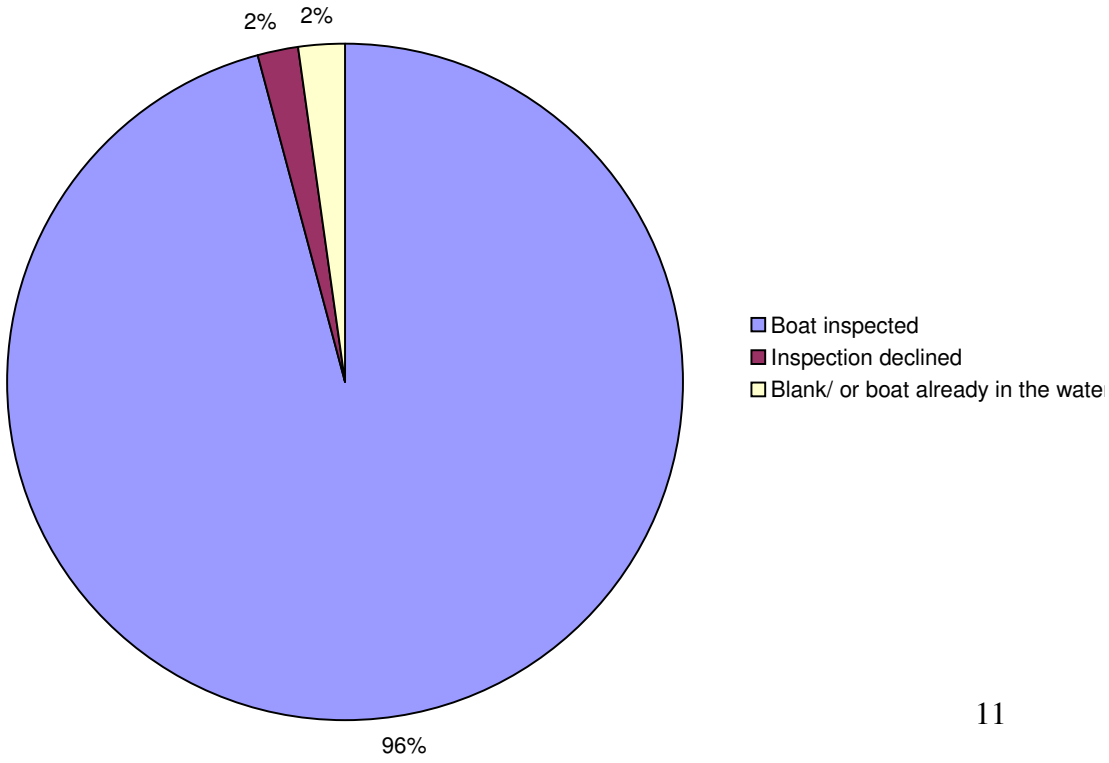
Graph 4 Are you willing to inspect and wash your boat after visiting a lake or pond?



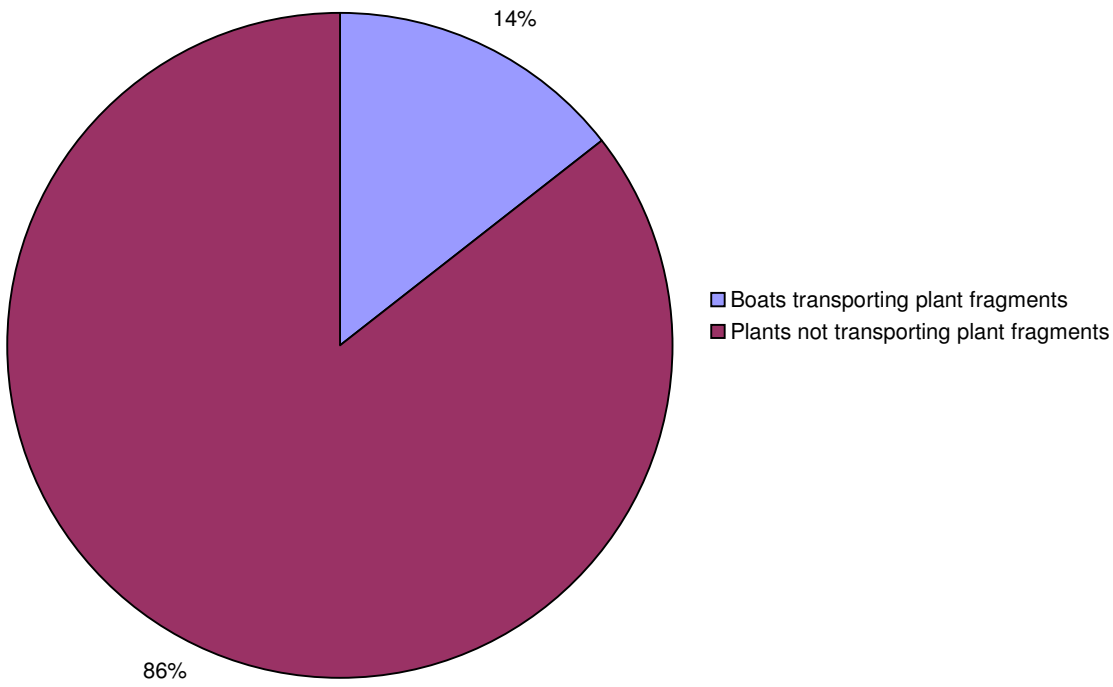
Graph 5 Has this conversation increased your awareness and concern of invasive species?



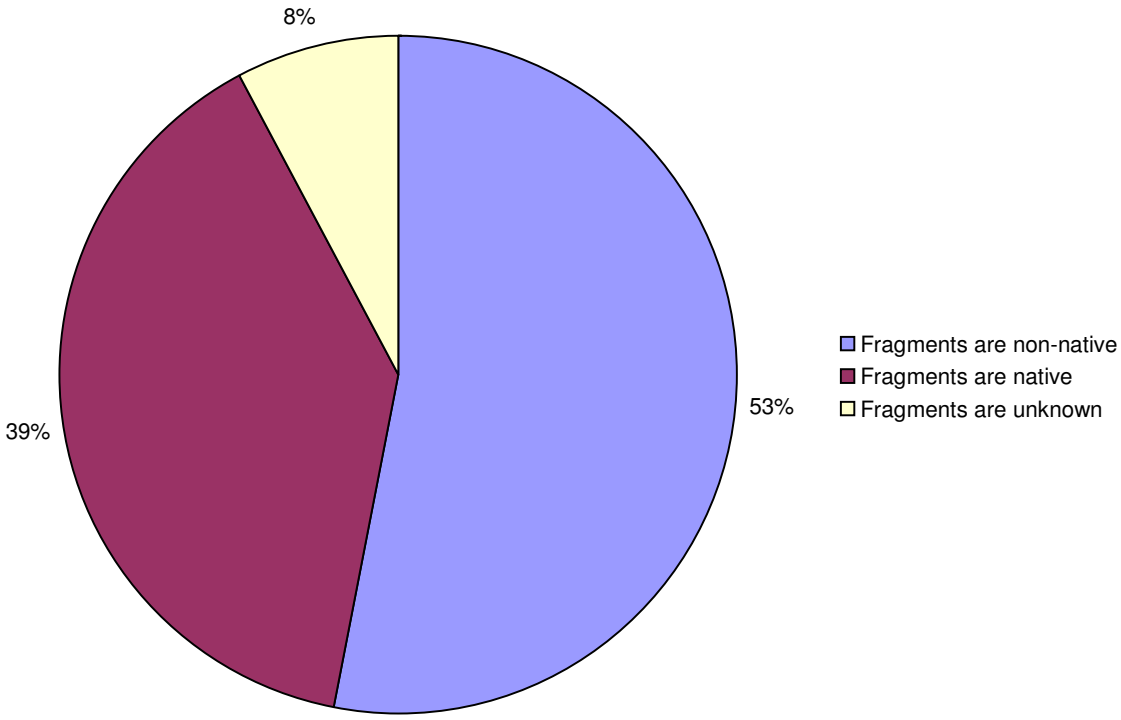
Graph 6 Did you get permission to inspect the boat and trailer?



Graph 7 Were any plant fragments present on the boat or trailer?



Graph 8 Were any of the plant fragments non-native?



Discussion

Based on this survey, it appears that boaters have an awareness of non-native issues, are generally willing to both wash and inspect their boat, and willing to participate in volunteer inspections and 110 saves resulted from the cooperation of the boaters. A save occurs when non-native plant fragments are removed from a boat prior to the boat entering or leaving a water body. In a few instances, mainly at Cochituate, the boats were leaving an infested water body and the plants were removed before they left the ramp. During the 2005 summer season, 14.4% of the boats inspected contained plant fragments and of these, 53.1% contained non-native species. The removal of the non-native plants prior to launching prevents the introduction of a non-native species into that water body, and the removal of the plants before the boat leaves the ramp, prevents further spread of the exotic species to other locations.

The majority of the boaters were aware of non-native species, mainly milfoil and zebra mussels. Many visitors explained that they had learned about these species through their fishing clubs or at local nature centers, however, approximately 31.9% of these people did not realize that they are spread by boats, trailers and gear.

In general, boaters were willing to inspect/wash their boats prior to entering or leaving water body. Only 37 boaters stated that they would not wash/inspect their vessel. The reasons given included: laziness, inconvenience, thought the plants were already dry/dead, and the high cost of gas needed to drive to a car wash. Perhaps boaters do not want to spend their free time washing their boat, or paying for a car wash. Some boaters were willing to inspect their boats, even if they do not plan to wash their boats.

The majority of the boaters (93.1%) felt that their encounter with the ramp monitor increased their awareness of invasive species. In a many cases when a boater did not feel that their awareness was increased it was because they already were very aware of non-native and the issues surrounding them. In a few cases, boaters circled NO but did not explain why they had not learned anything.

When asked if the boaters would participate in a voluntary inspection, there was 100% compliance at four of the ten ramps. At five of the ramps only 1-3 people declined an inspection. However, at Lake Cochituate 19 of the boaters were unwilling to participate in a voluntary inspection. The reason for the high number of refusals for that particular boat ramp is unclear. Since visitors to Lake Cochituate ranked second in both awareness of invasive species and the role of boats in their spread, it seems unusual that the level of unwillingness would be so high. Perhaps it is due to the fact the Cochituate is one of the busiest ramps in the state and the ramp can become quite hectic during peak boating hours, or they may have been in a hurry to start a fishing tournament early or to get into the water. It is also possible that the boaters had alcohol on board, out-of-date registration stickers etc, and were afraid of getting caught and fined.

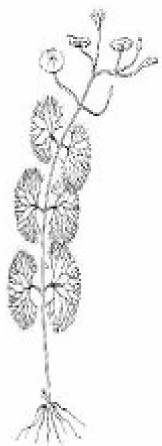
Even though the 2005 survey had been revised to encourage the ramp monitor to speculate *why* (did the boater seemed rushed? Have a carload of children? Was there was a long line at the gate? On the way to a tournament?), in only 2 instances out of 27 were reasons were given for the refusal. One refusal was attributed to a language barrier and the second because the boater seemed very rushed.

1440 (98%) of the boaters were willing to participate in the voluntary inspection and 207 of these boats were transporting plant fragments. In 110 instances, the plants were identified as non-native, and the removal/disposal of these fragments prevented the plants from being introduced or spread.

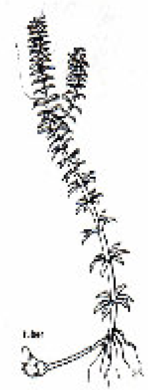
Based on the results and comments from the second season of ramp monitoring there have been several changes to the 2006 survey. Two questions have been eliminated in an attempt to shorten the completion time, and the area intended for the only ramp monitor to fill out, is more clearly defined. Several people requested that an area be provided for people to request additional information on invasive species. Lastly, ponds that had been visited by boats that were recently in water bodies infested with Zebra Mussels (ex. Twin Lakes, CT) will be carefully surveyed for the presence of this species in 2006.

Department of Conservation and Recreation
Lakes and Ponds Program
Boat Ramp Monitoring Program 2006

Date ______________
Location ______________



Boater Survey



1) What are the last two lakes or ponds that your boat has been in? ______________________

2) Prior to today, had you heard of invasive species? YES NO

   If so, which species have you heard about? ______________________

3) Prior to today, were you aware that one of the main ways that invasive plants enter a lake or pond is by hitching rides on boat trailers, motors and other gear? YES NO

4) Are you willing to take the time to inspect and/or wash your boat after visiting a lake? YES NO
   If not, why? ______________________

Thank you for your time!

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(Please do not write below this line. To be completed by the boat ramp monitor.)

- Did you obtain permission to inspect the boat and trailer? YES NO
- Were any plant fragments or aquatic animals present on the boat? YES NO
- If so, were they non-native? YES NO
- What species did you find? ______________________
- Comments:
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